



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/583,714

06/20/2006

Masanobu Fukuda

80357(47762)

6623

21874

7590

03/15/2011

EDWARDS ANGELL PALMER & DODGE LLP

P.O. BOX 55874

BOSTON, MA 02205

EXAMINER

KOLLIAS, ALEXANDER C

ART UNIT

PAPER NUMBER

1725

MAIL DATE

DELIVERY MODE

03/15/2011

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/583,714	Applicant(s) FUKUDA ET AL.	
	Examiner ALEXANDER C. KOLLIAS	Art Unit 1725	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 December 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 and 22 is/are pending in the application.
- 4a) Of the above claim(s) 5-10, 13 and 14 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 11-12, 15-20, 22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/14/2010 has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any

Art Unit: 1725

evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1, 4, 11-12, and 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nowak et al (US 6,503,965) in view of Yamamoto et al (US 6,111,044).

Regarding claim 1, Nowak et al discloses an ink composition comprising metallic pigments such as aluminum, copper, and bronze pigments which have a thickness from 0.1 to 2 microns and a diameter from about 1 to 200 microns (Column 8, Lines 25-46). It is recognized, that the present claims recite average thickness and diameter, while Nowak et al discloses pigment thickness and diameter. However, given the broad range of thickness and diameter of the metal pigments disclosed by the reference, absent evidence to the contrary, it is the Examiner's position that the thickness and diameter of the pigments disclosed by the reference meet the recited average thickness and diameter recited in claim 1.

Regarding the pigment diameter and thickness disclosed by Nowak et al, It is well settled that where the prior art describes the components of a claimed compound or compositions in concentrations within or overlapping the claimed concentrations a prima facie case of obviousness is established. See *In re Harris*, 409 F.3d 1339, 1343, 74 USPQ2d 1951, 1953 (Fed. Cir 2005); *In re Peterson*, 315 F.3d 1325, 1329, 65 USPQ 2d 1379, 1382 (Fed. Cir. 1997); *In re Woodruff*, 919 F.2d 1575, 1578 16 USPQ2d 1934, 1936-37 (CCPA 1990); *In re Malagari*, 499 F.2d 1297, 1303, 182 USPQ 549, 553 (CCPA 1974).

Art Unit: 1725

Nowak discloses all the claim limitations as set forth above. However, while the reference discloses resins, the reference does not disclose that the resin has 50 to 500 mmol/kg of a carboxylic acid group.

Yamamoto et al discloses a thermosetting composition which may be utilized coatings, where the thermosetting composition comprises an acrylic resin having at least one functional group such as a carboxylic acid group; the concentration of the group in the resin is from 0.5 to 4 mol/kg, i.e., 500 to 4,000 mmol/kg (Abstract, Column 5 Lines 5-30, Column 6, Lines 60-68, Column 10 Lines 33-68, and Column 11 Lines 1-29). If the concentration is less than 0.5 mol/kg (500 mmol/kg) a cured film having sufficient cross-linking density, as well as chemical resistance, physical properties such as abrasion resistance and weatherability is poor; amounts greater than 4 mol /kg (4,000 mmol/kg) adversely affect the cured film properties (Column 6 Lines 60-68 and Column 7 Lines 1-6).

Given that Nowak discloses an ink composition comprising thermosetting results, light of the particular advantages provided by the use and control of the thermosetting resin containing carboxyl groups as taught by Yamamoto, it would therefore have been obvious to one of ordinary skill in the art to include such resins in the composition disclosed by Nowak with a reasonable expectation of success.

Regarding claim 4, the combined disclosures of Nowak and Yamamoto et al teach all the claim limitations as set forth above. Additionally, it is noted that Nowak discloses that pigment comprises from about 0.1 to about 60 wt % of the ink composition (Column 3, Lines 60-67).

Art Unit: 1725

Regarding the amount of pigment disclosed by the reference, it is well settled that where the prior art describes the components of a claimed compound or compositions in concentrations within or overlapping the claimed concentrations a prima facie case of obviousness is established. See *In re Harris*, 409 F.3d 1339, 1343, 74 USPQ2d 1951, 1953 (Fed. Cir. 2005); *In re Peterson*, 315 F.3d 1325, 1329, 65 USPQ 2d 1379, 1382 (Fed. Cir. 1997); *In re Woodruff*, 919 F.2d 1575, 1578 16 USPQ2d 1934, 1936-37 (CCPA 1990); *In re Malagari*, 499 F.2d 1297, 1303, 182 USPQ 549, 553 (CCPA 1974).

Regarding claim 11, the combined disclosures of Nowak and Yamamoto et al teach all the claim limitations as set forth above. Additionally, it is noted that Nowak discloses the use of high boiling point organic solvent in the ink composition, i.e. above 100 °C such as alcohols, polyols, hydrocarbons, etc (Abstract, Column 4, Lines 15-27, Column 6, Lines 26-39). Based on the disclosure that the solvents utilized in the ink composition have boiling point of greater than 100 °C and based on the types of solvents disclosed, it is clear that the disclosed ink composition does not contain water.

Regarding claim 12, the combined disclosures of Nowak and Yamamoto et al teach all the claim limitations as set forth above. It is noted, as discussed above, while Nowak discloses aluminum leafing pigments. Although Nowak does not disclose the metal thin film fragments are obtained from a metal thin film which is obtained by sputtering, malleation and aluminum vapor deposition, it is noted that “[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The

Art Unit: 1725

patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process”, In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985) . Further, “although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product”, In re Marosi, 710 F.2d 798, 802, 218 USPQ 289, 292 (Fed. Cir.1983). See MPEP 2113.

Therefore, absent evidence of criticality regarding the presently claimed process of obtaining metal fragments and given that Nowak et al meets the requirements of the claimed composition, the reference clearly meet the requirements of present claims.

Regarding claim 16, the combined disclosures of Nowak and Yamamoto et al teach all the claim limitations as set forth above. As discussed above, Nowak discloses an ink composition containing metallic pigments such as aluminum, copper and bronze pigments leafing pigments, thus it is clear that the pigments discloses in the reference are metal thin fragments obtains form a thin film made of metal as presently claimed.

Regarding claim 17, the disclosures of Nowak and Yamamoto et al teach all the claim limitations as set forth above. It is noted, as discussed above, while Nowak discloses aluminum leafing pigments. Although Nowak does not disclose the metal thin film fragments obtained from a vapor deposited metal thin film, it is noted that “[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product

Art Unit: 1725

itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process”, In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985) . Further, “although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product”, In re Marosi, 710 F.2d 798, 802, 218 USPQ 289, 292 (Fed. Cir.1983). See MPEP 2113.

Therefore, absent evidence of criticality regarding the presently claimed process of obtaining metal fragments and given that Nowak et al meets the requirements of the claimed composition, the reference clearly meet the requirements of present claims.

6. Claims 2-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nowak et al (US 6,503,965) and Yamamoto et al (US 6,111,044) as applied to claims 1, 4, 11-12, and 16-17 above, and in view of Molloy et al (US 6,476,096).

The discussion with respect to Nowak et al and Schrempp et al as set forth in Paragraph 5 above is incorporated here by reference.

Regarding claims 2-3, the combined disclosures of Nowak et al and Yamamoto et al disclose all the claim limitations as set forth above. However, the references do not disclose that the ink composition comprising an acid anhydride.

Molloy et al discloses, the use of acid anhydrides in non-aqueous ink compositions , i.e. succinic anhydride which are added to the ink compositions in over to enhance the stability of

Art Unit: 1725

the ink composition (Abstract, Column 4, Lines 31-36, Lines 53-57 and Lines 61-67).

Furthermore, the reference disclose that anhydride is added to the ink composition in an amount up to 50 wt %, based on the amount of pigments (Column 10, Lines 29-31, claim 11). It is noted that the anhydride disclosed by the reference, meets the anhydride moiety recited in claim 3, i.e. $-C(=O)OC(=O)-$.

Given that both Nowak et al and Molloy et al are drawn to ink compositions comprising pigments, and resins, and, given that Nowak does not explicitly prohibit other ingredients, in light of the particular advantages provided by the use and control of the acid anhydride as taught by Molloy et al, it would therefore have been obvious to one of ordinary skill in the art to include such compounds in the composition disclosed by Nowak et al with a reasonable expectation of success.

7. Claims 15 and 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nowak et al (US 6,503,965) in view of Yamamoto et al (US 6,111,044) and Molloy et al (US 6,476,096).

Regarding claim 15, Nowak et al discloses an ink composition comprising metallic pigments such as aluminum, copper and bronze leafing pigments which have a thickness from 0.1 to 2 microns and a diameter from about 1 to 200 microns (Column 8, Lines 25-46). It is recognized, that the present claims recite average thickness and diameter, while Nowak et al discloses pigment thickness and diameter. However, given the broad range of thickness and diameter of the metal pigments disclosed by the reference, absent evidence to the contrary, it is

Art Unit: 1725

the Examiner's position that the thickness and diameter of the pigments disclosed by the reference meet the recited average thickness and diameter recited in claim 15.

Nowak discloses all the claim limitations as set forth above. However, while the reference discloses resins, the reference does not disclose that the resin has 50 to 500 mmol/kg of a carboxylic acid group.

Yamamoto et al discloses a thermosetting composition which may be utilized coatings, where the thermosetting composition comprises an acrylic resin having at least one functional group such as a carboxylic acid group; the concentration of the group in the resin is from 0.5 to 4 mol/kg, i.e., 500 to 4,000 mmol/kg (Abstract, Column 5 Lines 5-30, Column 6, Lines 60-68, Column 10 Lines 33-68, and Column 11 Lines 1-29). If the concentration is less than 0.5 mol/kg (500 mmol/kg) a cured film having sufficient cross-linking density, as well as chemical resistance, physical properties such as abrasion resistance and weatherability is poor; amounts greater than 4 mol /kg (4,000 mmol/kg) adversely affect the cured film properties (Column 6 Lines 60-68 and Column 7 Lines 1-6).

Given that Nowak discloses an ink composition comprising thermosetting results, light of the particular advantages provided by the use and control of the thermosetting resin containing carboxyl groups as taught by Yamamoto, it would therefore have been obvious to one of ordinary skill in the art to include such resins in the composition disclosed by Nowak with a reasonable expectation of success.

Regarding the pigment diameter and thickness disclosed by Nowak et al, It is well settled that where the prior art describes the components of a claimed compound or compositions in concentrations within or overlapping the claimed concentrations a prima facie case of

Art Unit: 1725

obviousness is established. See *In re Harris*, 409 F.3d 1339, 1343, 74 USPQ2d 1951, 1953 (Fed. Cir. 2005); *In re Peterson*, 315 F.3d 1325, 1329, 65 USPQ 2d 1379, 1382 (Fed. Cir. 1997); *In re Woodruff*, 919 F.2d 1575, 1578 16 USPQ2d 1934, 1936-37 (CCPA 1990); *In re Malagari*, 499 F.2d 1297, 1303, 182 USPQ 549, 553 (CCPA 1974).

The combined disclosures of Nowak et al and Yamamoto et al disclose all the claim limitations as set forth above. However, the references do not disclose that the ink composition comprising an acid anhydride.

Molloy et al discloses, the use of acid anhydrides in non-aqueous ink compositions, i.e. succinic anhydride which are added to the ink compositions in order to enhance the stability of the ink composition (Abstract, Column 4, Lines 31-36, Lines 53-57 and Lines 61-67). Furthermore, the reference discloses that anhydride is added to the ink composition in an amount up to 50 wt %, based on the amount of pigments (Column 10, Lines 29-31, claim 11). It is noted that the anhydride disclosed by the reference, meets the anhydride moiety recited in claim 3, i.e. --C(=O)OC(=O) .

Given that both Nowak et al and Molloy et al are drawn to ink compositions comprising pigments, and resins, and, given that Nowak does not explicitly prohibit other ingredients, in light of the particular advantages provided by the use and control of the acid anhydride as taught by Molloy et al, it would therefore have been obvious to one of ordinary skill in the art to include such compounds in the composition disclosed by Nowak et al with a reasonable expectation of success.

Art Unit: 1725

Regarding claim 19, the combined disclosures of Nowak, Molloy, and Yamamoto teach all the claim limitations as set forth above. As discussed above, Nowak discloses pigments such as aluminum, copper and bronze leafing pigments which have a thickness from. Thus it is clear that the pigments discloses in the reference are metal thin fragments obtains form a thin film made of metal as presently claimed.

Regarding claim 20, the combined disclosures of Nowak, Molloy, and Yamamoto teach all the claim limitations as set forth above. It is noted, as discussed above, while Nowak discloses aluminum leafing pigments. Although Nowak does not disclose the metal thin film fragments obtained from a vapor deposited metal thin film, it is noted that “[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process”, *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985) . Further, “although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product”, *In re Marosi*, 710 F.2d 798, 802, 218 USPQ 289, 292 (Fed. Cir.1983). See MPEP 2113.

Therefore, absent evidence of criticality regarding the presently claimed process of obtaining metal fragments and given that Nowak et al meets the requirements of the claimed composition, the reference clearly meet the requirements of present claims.

8. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nowak et al (US 6,503,965).

Regarding claim 22, Nowak et al discloses an ink composition comprising metallic pigments such as aluminum, copper, and bronze pigments which have a thickness from 0.1 to 2 microns and a diameter from about 1 to 200 microns (Column 8, Lines 25-46). It is recognized, that the present claims recite average thickness and diameter, while Nowak et al discloses pigment thickness and diameter. However, given the broad range of thickness and diameter of the metal pigments disclosed by the reference, absent evidence to the contrary, it is the Examiner's position that the thickness and diameter of the pigments disclosed by the reference meet the recited average thickness and diameter recited.

Regarding the pigment diameter and thickness disclosed by Nowak et al, It is well settled that where the prior art describes the components of a claimed compound or compositions in concentrations within or overlapping the claimed concentrations a prima facie case of obviousness is established. See *In re Harris*, 409 F.3d 1339, 1343, 74 USPQ2d 1951, 1953 (Fed. Cir 2005); *In re Peterson*, 315 F.3d 1325, 1329, 65 USPQ 2d 1379, 1382 (Fed. Cir. 1997); *In re Woodruff*, 919 F.2d 1575, 1578 16 USPQ2d 1934, 1936-37 (CCPA 1990); *In re Malagari*, 499 F.2d 1297, 1303, 182 USPQ 549, 553 (CCPA 1974).

Response to Arguments

9. Applicant's arguments filed 12/14/2010 have been fully considered but they are not persuasive.

10. Applicants' arguments regarding unexpected results obtained for the ink compositions presented in the instant Specification and those of 37 C.F.R. 1.132 Declaration filed on 11/15/2010 are not found to be convincing for the following reasons:

The comparison of Inventive Example 2 to Comparative Examples 4-5 is not a proper side by side comparison given the different amounts of binder utilized in these examples. For example:

a. Inventive Example 2 comprises 12 parts of a binder while Comparative Example 4 comprises 11 parts of a mixture of two binders; Comparative Example 5 comprises 20 parts of a binder.

b. Inventive Example 3 comprises 18 parts of a binder while Comparative Examples 4 and 5 comprise either 20 parts of a single binder or 11 parts of a mixture of two.

With respect to the comparison of Inventive Ink 1, the only proper side by side comparison is Comparative Example 4. However, it is noted that neither these examples nor those discussed previously (a and b above) are commensurate in scope with the scope of the present claims. The present claims recite a composition comprising metal thin film fragments, a binder resin having 50 to 500 mmol/kg of a carboxyl group, a phosphoric acid group or a sulfonic acid group, while the present examples presented in the Specification are drawn to ink compositions comprising specific metallic fragments, i.e. aluminum thin fragments, and specific binders, i.e. carboxyl containing vinyl chloride-vinyl acetate and urethane resins, as well as solvents. Given the specific binder, metal fragments, and solvents utilized in the embodiments presented in Table 1 of the present Specification and given the generic binders and metal

Art Unit: 1725

fragments recited in the present claims, it is not clear if the results presented in Table 1 hold for all combinations of solvent, binder, and metal fragments or only for those presented in the present Specification.

With respect to the 37 C.F.R. 1.132 Declaration filed on 11/15/2010, it is noted that the results are not found to be persuasive for the following reasons: The comparison of Ink Compositions 11-A and 12-A are proper side by side comparison given that the only difference in the compositions is that Ink 11-A comprises 310 mmol/kg of a carboxyl functional group, while Ink 12-A comprises greater than 500 mmol/g. (sic). However, it is noted that (a) the comparative ink is disclosed as having 500 mmol/g while the present claims require an upper bound amount of 500 mmol/kg and (b) an upper bound concentration is not disclosed, i.e. greater than 500 mmol/g. Thus it is unclear the carboxyl group concentration in the comparative example in the Declaration, i.e. is it 500 mmol/g 500 mmol/kg, >500 mmol/g, or >500 mmol/kg

Further, it is noted that examples disclosed in the Declaration are not commensurate in scope with the scope of the present claims. The present claims recite a composition comprising metal thin film fragments, a binder resin having 50 to 500 mmol/kg of a carboxyl group, a phosphoric acid group or a sulfonic acid group, while the present examples presented in the Declaration are drawn to ink compositions comprising specific metallic fragments, i.e. aluminum thin fragments, and specific binders, i.e. carboxyl containing urethane resin, as well as solvents. Given the specific binder, metal fragments, and solvents utilized in the embodiments presented in Declaration and given the generic binders and metal fragments recited in the present claims, it is not clear if the results presented in Table 1 hold for all combinations of solvent, binder, and metal fragments or only for those presented in the Declaration.

11. Applicants argue that while Molloy discloses the use of anhydride, the reference discloses the use of the anhydride in combination the dicarboxylic acids, and therefore does not disclose or suggest the use of an acid anhydride itself can function as a dispersant. However, it is significant to note the open language of the present claims (c.f. the use of the phrase “comprising”), and thus the present claims no in any way limit or prohibit the use or inclusion of other ingredients, including the dicarboxylic acids disclosed by Molloy.

12. Applicants argue that Molloy fails to disclose the use of metallic fragment pigments in combination with amounts of anhydride. However, it is noted that Molloy was utilized to teach the use of acid anhydrides in non-aqueous ink compositions, i.e. succinic anhydride which are added to the ink compositions in over to enhance the stability of the ink composition. While Molloy does not disclose all the features of the present claimed invention, the reference is used as teaching reference, and therefore, it is not necessary for this secondary reference to contain all the features of the presently claimed invention, In re Nievelt, 482 F.2d 965, 179 USPQ 224, 226 (CCPA 1973), In re Keller 624 F.2d 413, 208 USPQ 871, 881 (CCPA 1981). Rather this reference teaches a certain concept, namely the use of anhydrides as influencing ink stability, and in combination with the primary reference, discloses the presently claimed invention. If the secondary reference contained all the features of the present claimed invention, it would be identical to the present claimed invention, and there would be no need for secondary references.

Art Unit: 1725

13. With respect to Applicants' arguments regarding unexpected results of ink composition comprising acid anhydride and viscosity after aging as compared to ink compositions which do not comprise such compound, are found to be persuasive for the following reasons:

The comparison of Ink 1 (Comparative) to Inventive Example 1-A, presented in Table 1 of the present Specification, is a proper side by side comparison, it is noted that the present claims recite that the use of 0.01 to 30 wt % acid anhydride, based on the amount of metallic pigment while Inventive Example 1-A comprises 18.3 wt %. Similarly, although Inventive Examples 2-A and 2-B, are proper side by side comparisons with comparative Ink 2, with Inks 2-A and 2-B comprising 37.5 wt % acid anhydride and 28 wt % acid anhydride, it is significant to note that Ink 2-A has an acid anhydride content of 37.5 wt %, relative to the amount of metallic pigments which is outside the presently claimed range of 0.1 to 30 wt %.

14. Furthermore although inventive inks 1-A and 2-B have amounts of acid anhydride within the presently claimed range, it is noted that these inventive examples have amounts towards the upper bound of the presently claimed range. That, is these examples do not disclose amounts of acid anhydride over the entire claimed range of 0.01 to 30 wt %. As set forth in MPEP 716.02(d), whether unexpected results are the result of unexpectedly improved results or a property not taught by the prior art, "objective evidence of nonobviousness must be commensurate in scope with the claims which the evidence is offered to support". In other words, the showing of unexpected results must be reviewed to see if the results occurred over the entire claimed range, In re Clemens, 622 F.2d 1029, 1036, 206 USPQ 289, 296 (CCPA 1980). Applicants have not

Art Unit: 1725

provided data to show that the unexpected results do in fact occur over the entire claimed range of acid anhydride.

Conclusion

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALEXANDER C. KOLLIAS whose telephone number is (571)-270-3869. The examiner can normally be reached on Monday-Friday, 8:00 AM -5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Basia Ridley can be reached on (571)-272-1453. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/A. C. K./
Examiner, Art Unit 1725

/Basia Ridley/
Supervisory Patent Examiner, Art Unit 1725